Case Study: Eagle Bay Rise Greenfield Subdivision

### Eagle Bay Rise Greenfield Subdivision

**Project description**

This is a 60 allotment residential development in Eagle Point. 

*Examples: new residential development, new industrial development, mixed-used re-development.*

**Project details**

**Project area (size in ha):**

Approximately 11 Ha in total area, including 7.1 Ha draining to the Eagle Bay Rise wetland.

**Project location:**

Within Eagle Point this subdivision has lake views – of the world famous Mitchell River Silt Jetties and Eagle Point Bay. Real estate agencies promote the wide open spaces, picnic areas, wildlife habitats, walking tracks, boat launching ramp and safe beach access. The 11 Ha site is found west of the main township and is bound by Woodman Road to the north, Eagle Point road to the east and low density residential land to the west and south.

**Proximity to waterway(s):**

No designated waterways are found within the development. The outlet of the subdivision does connect of a semi-natural drainage line (a designated waterway).

**Have the potential impacts of flooding on the development area been considered and assessed? Please explain.**

No known flooding concerns within the study area were identified, however localised flooding on the western side of Eagle Point road culvert crossing was noted. This crossing was upgraded as part of this project.

### How does your project impact on your waterway(s)?

Increase in urban areas leads to an increase in impervious surfaces and runoff volumes, which impose high pressure on the natural resources.

- More runoff from more impermeable surfaces (roads, homes etc)
- Urban pollution
- Flooding to neighbouring land

*Examples: will your project generate excess stormwater runoff or sediment loads? Will it have a direct impact on the surrounding waterways?*

### Which of the key principals apply to the project? How?

The key principal that applied was (step 2) to **minimise** the impacts by careful planning and design, and the use of WSUD.

**Key principals include:**

1. **Avoid** adverse impacts, particularly through vegetation clearance, additional pollutant loading, barrier construction or structural change to the waterway;
2. If impacts cannot be avoided, **minimise** impacts by careful planning, design and management (this
is the most frequent case, and the management of stormwater through WSUD systems); and
3. If clearing or significant modification of the waterway must occur, the works should be offset
through provision of financial contribution or in-kind work to the Council to significantly enhance other
values of the waterway.

How can you avoid the impacts and help protect our waterways?

Implementation of WSUD strategies:

**Retarding Basin** – to capture and store the excess runoff created by the increased impermeable land.
This minimises flooding, reduces impacts on the downstream environment and helps manages erosion.

**Sedimention Basin** – Captures sediment, stopping it being transported downstream.

**Wetland** – Treats the pollution generated by the development to reduce impacts on the downstream enviroironment.

**Road and landscape design** – Roads and reserves withing the development have been designed to
safely move stormwater around ultimately getting it to the combined wetland retarding basin system.

The design of the measures was undertaken as part of a larger drainage study, which involved creating and overarching strategy to manage development within the catchment of the small semi natural waterway. Taking this approach meant these works would be complimented by future works should more development occur within the catchment.

BEFORE: Eagle Bay Rise Wetland design by Crossco.
AFTER: Eagle Bay Rise constructed wetland

Benefits:
- Removal of sediments and nutrients
- Attenuation of stormwater flows
- Protection of downstream systems
- Establishment of amenity/recreational value for the community
- Enhanced habitat for fauna

Examples: flood protection, local stormwater management, end of the line systems, riparian zone strategy.